

ABSTRACT

An objective of the present invention is to provide monodisperse colored spherical particles each having two separated color regions of two hues, that is, two-colored spherical particles, useful, for example, for displays of characters, graphics, images and the like, the two hues being for reverse display in terms of electricity and magnetism from the viewpoint of good suitability for display, and to provide a novel production process thereof and an apparatus for producing the colored spherical particles. In the production process and the apparatus for producing the colored spherical polymer particles, microchannels are utilized including a first microchannel 1 through which a colored continuous phase comprising a color dye/pigment dispersed in a fluid dispersing medium containing a polymerizable resin component and having colored phases 6a, 6b of different hues is transferred, and a second microchannel 2 through which a spheroidizing disperse phase 7 flows. The colored continuous phase comprising colored phases 6a, 6b of different hues and the spheroidizing disperse phase 7 are in an O/W (oil-in-water) or W/O (water-in-oil) relationship with each other. The colored phases 6a, 6b for constituting the colored

continuous phase are transferred into the first microchannel 1, and the colored continuous phase comprising the colored phases 6a,6b are discharged continuously or intermittently at a predetermined flow rate F2 (ml/hr) into
5 the spheroidizing disperse phase 7 which flows through the second microchannel 2 to spheroidize the discharged colored continuous phase having two hues and to cure the polymerizable resin component in the colored continuous phase, whereby colored spherical polymer particles are
10 formed.